



Zebra's "Plug and Print" Initiative...

Barcode Label Printing from SAP R/3

**BAR-ONE^â
For
SAP R/3**

Application White-paper

February 7, 2000

Rev F

BAR-ONE[®] for SAP R/3

*Expand the scope
of SAP R/3 modules
by integrating high
quality barcode
label printing*

SAP R/3 helps organizations manage comprehensive financial, manufacturing, human resources, sales and distribution functions that are essential to their operations. The capability to leverage the data integrity provided by SAP R/3 modules can now be realized by directly integrating barcode labeling into many common business processes.

While dynamic documents and reports are the predominant printed output from SAP R/3 modules, customers also want to output high-quality barcode labels with graphics, directly within SAP R/3, for applications such as manufacturing, shipping, item tracking and stock control. Such labels require the use of specialty barcode label printers.

Today, customers who wish to integrate barcode label printers within SAP R/3, are presented with the option to either upload the printer programming language into a SAPscript layout (upload method) or use label design software in combination with an external service (middleware typically on an NT or Unix server). SAP documentation, located on SAPnet, describes how label printers can be driven direct from SAP R/3.

*Eliminate multi-site
setup and
maintenance*

In choosing the upload method over the external service approach, SAP R/3 users can leverage existing SAP print services and eliminate the need to purchase, setup and maintain the application for every server at every separate site location. This approach can greatly reduce equipment costs, reduce implementation time and improve process throughput.

To take full advantage of the SAP R/3 upload method, Zebra Technologies Corporation, with assistance from SAP's development team and global SAP R/3 end users, has developed a special version of its BAR-ONE label design software.

*The world's first
dedicated SAP R/3
barcode label
design tool for
barcode label
printers*

Utilizing BAR-ONE for SAP R/3, users can now integrate barcoding into any existing SAP R/3 application.

*Plug and Print
directly from SAP
R/3 without having
to program
SAPscript*

Zebra's BAR-ONE for SAP R/3 software provides easy-to-use label design capabilities that support all of the Zebra printers' functionality and high performance. Below are a few of the benefits available from the combination of Zebra Printers and BAR-ONE for SAP R/3:

- No need to manually write SAPscript. All label design and object manipulation is done graphically (minutes instead of days)!
- All Zebra resident bar code symbologies are supported, including UCC/EAN 128, PDF417, Datamatrix and Maxicode. Resident barcodes provide maximum performance and accuracy.
- All Zebra resident fonts, including Windows® TrueType fonts. TrueType fonts can be used for variable data, including serial numbers, with no degradation to label throughput. Support is also included for seven optional Zebra resident scaleable fonts (CG Triumvirate and CG Triumvirate Condensed family).
- Dynamic text formatting of SAP R/3 variable data, including automatic word wrapping, left, right and center justification at any orientation for all fonts.
- Any barcode, text or graphic field can be linked to any SAP R/3 database field or system variable (i.e. *&tablename-fieldname&* or *&SY-UNAME&*) via a simple point-and-click selection.
- Variable graphic images (i.e., logos, symbols, etc.) can be printed, depending on the contents of a SAP R/3 variable field.
- Smart printer wizards make it easy to store graphics, fonts and formats on printer-based PC cards and flash memory. This provides zero download time for fast "first-label-out", and reduces network traffic to a minimum.
- BAR-ONE for SAP R/3 automatically generates SAPscript, for Zebra printers, in SAP R/3 Internal Text Format (ITF). No manual modifications need to be made to these commands.
- All variable fields, including graphics, support advanced SAPscript programming. This is required if you wish to control the contents of a field based on SAPscript IF / ELSEIF conditioning or wish to use SAPscript INCLUDE commands. This is done directly within "BAR-ONE for SAP". It does not require any further editing within SAP R/3 and allows for simple future label design modifications.
- Maximum control and performance of all Zebra printer features.

*No manual
modifications
needed before
uploading into SAP
R/3*

How It Works

All SAP printer drivers are built for forms printing on mainstream office printers

Excluding middle-ware and BAR-ONE for SAP R/3, forms would traditionally be designed by manually writing SAPscript commands. SAPscript then requires that you have a proprietary SAP R/3 printer driver loaded for your target device. This approach does not work for barcode label printing due to the following:

- SAP R/3 has drivers for mainstream office printers but not barcode label printers.
- SAP R/3 drivers are designed for forms & report printing, not barcode labels.
- SAPscript barcode commands are complex, support few symbologies and have basically been built as fonts. They also provide poor support for rotation, check-digits, narrow bar width, ratio, and are not supported by any specialty barcode label printer (other than via emulation such as PCL etc.).

SAP R/3 also supports printing with Windows drivers via the SAPWin device type and SAPIpd. This approach does not work for barcode label printing and specialty barcode label printers due to the following:

- SAPWin device type has no support for barcode label printer features such as barcodes, cutter, flash memory, print speeds and darkness etc.
- SAPWin device type and barcode label Windows printer drivers may send the entire label down as a graphic and need to do this for every label with variable data (slow printing and lots of network traffic).
- SAPscript barcodes are not supported with the SAPwin device type, unless you source a 3rd party barcode DLL. These barcodes are downloaded as bitmap objects via Windows drivers. This can reduce performance and barcode accuracy (it's also expensive).
- SAPWin does not support printing directly from the server to the printer (SAPIpd must be used).

BAR-ONE for SAP R/3 is a graphical SAPscript generator

BAR-ONE for SAP R/3 is a graphical barcode label design tool that generates SAPscript for use with Zebra printers. This means the user does not need to manually program SAPscript to design or print labels. SAP has built Zebra device types for SAP R/3. These drivers are optimized for use with BAR-ONE for SAP R/3.

*Printing is done
direct from the SAP
R/3 server*

After the label is designed graphically in BAR-ONE for SAP R/3, it can easily and quickly be uploaded into SAP R/3, via the SAP R/3 Windows client. Once uploaded, the label can be printed from any other SAP R/3 client, anywhere in the world, to any Zebra printer without the need to purchase, setup or maintain any additional software. The printing is done direct from the SAP R/3 server. The only requirement is that each server has the Zebra device driver installed. The Zebra device driver for SAP R/3 is free and available from the SAP FTP site or directly from Zebra. The installation of this driver takes only a few minutes and it need never be maintained or modified.

*No SAPscript
programming is
required.*

Formatting attributes on the label are easily moved, changed, added, or deleted using the BAR-ONE for SAP R/3 WYSIWYG label design tool. No SAPscript programming is required to make formatting changes. Label size, font types, barcode symbology, line spacing, justification, logos, lines, boxes, circles, ellipses and variable data are all specified within the label design. A label can easily be modified at any time and re-uploaded into SAP R/3 without the need to make any manual modifications in SAPscript.

*Complex labeling
applications are
also supported*

Complex labeling applications may require that some SAPscript needs to be written, i.e., filling in of variable fields based on the contents of other fields. This SAPscript can be written and stored within variable fields directly in BAR-ONE for SAP R/3. This allows for label designs to be easily modified, multiple times, and avoid the need to manually modify or re-write SAPscript.

*BAR-ONE for SAP
R/3 is a proven
solution*

BAR-ONE for SAP R/3 is already installed in some of the world's largest SAP R/3 sites. One example of this is a chemical company, printing HAZchem labels that has 150 locations worldwide.

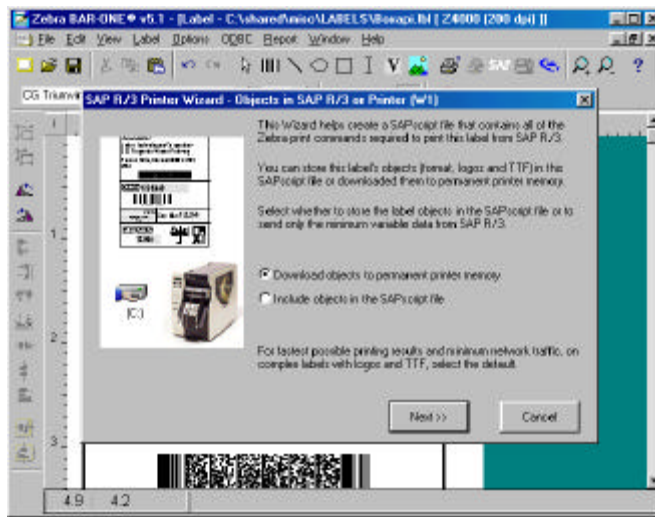
How it Works

Design labels with the easy-to-use Zebra professional barcode labeling software

Step 1 – Design the label graphically using BAR-ONE for SAP R/3. Place fixed or variable objects on the label including text, barcodes, logos, lines, boxes, circles etc.

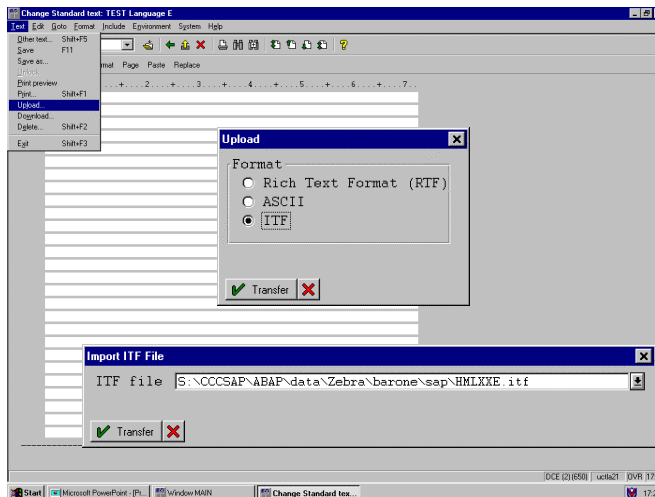
Step 2 – Press the SAP R/3 icon and use the Smart Printer Wizard to help decide if you wish to download logos and fonts from SAP R/3 or store them on flash memory inside the printer. When completed, this will save the label design in a format that can be uploaded into SAP R/3 (SAPscript Internal Text Format).

Smart Printer Wizard stores fonts and logos in SAP R/3 or the printer's non-volatile memory



Step 3 – Upload the ITF file, generated by BAR-ONE for SAP R/3, using the SAP R/3 Windows Client. This is uploaded into the standard editor and then pasted into a Form Window

Upload the BAR-ONE generated ITF file directly into SAP R/3



The Benefits

*Easy and
inexpensive to
implement and
maintain*

Zebra BAR-ONE for SAP R/3 provides an easy, fast way to print complex bar coded labels on demand from SAP R/3. Users can count on complete data integrity as label data is generated directly from SAP R/3.

Labels are easier to design and maintain because no modifications are required to be manually made to the SAPscript generated by BAR-ONE for SAP R/3. Labels can be printed on just about any native platform, directly from the server or via SAPlpd, while still maintaining the features and performance found in PC based labeling software. The SAPscript composer can save processing time because the layout set is simpler. Downloading the labels only once and storing them on the printer reduces the amount of data transferred across the network and speeds up printing. Fast “first-label-out” can be achieved by storing label formats, graphics and TrueType fonts in printer-based non-volatile memory. Zebra printers support PC cards and flash memory.

The major features and benefits that customers will see when they use BAR-ONE for SAP R/3 are listed below:

Feature	Benefit
Easy to use WYSIWYG bar code label design tool.	No SAPscript programming required to implement. SAPscript is all generated automatically (minutes rather than days to design labels).
BAR-ONE for SAP R/3 is optimized for Zebra Printers.	Provides full functionality and maximum performance with Zebra printers including maximum print speed, word wrapping, text justification, serialization, and variable graphics.
Non-programmers can modify labels.	Easy and inexpensive to maintain.
Print directly from any SAP R/3 Server.	No need to use PCs, or SAPlpd, as print servers. This reduces cost and improves print speed.
Take advantage of existing SAP R/3 print services and SAPscript.	No new learning curve, giving faster implementation. This <u>significantly reduces cost</u> – Thousands of \$\$\$.
Print directly from SAP R/3. No need to purchase, implement, setup or maintain middle-ware.	This significantly reduces costs in a <u>multi-site implementation</u> . This also provides the fastest possible live implementation. Multi-national companies could see <u>savings of up to \$100,000 or more!</u>
Zebra’s SAP R/3 Knowledge, support and training.	Working directly with SAP and large SAP R/3 end users, Zebra has gained invaluable working knowledge of barcode printing within SAP R/3. Zebra has it’s own Software Engineers (SEs) that can help you, or your solution provider, with implementation and training.

*For more information
on BAR-ONE for SAP R/3
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please contact...*

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